

P A T E N T

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appellant: THOMAS W. DAVISON et al. Confirmation No.: 2572
Serial No.: 10/713,820 Examiner: NGUYEN, VI X
Filed: NOVEMBER 14, 2003 Group Art Unit: 3734
Docket No.: 1291.1174101 Customer No.: 28075
Title: CANNULA FOR RECEIVING SURGICAL INSTRUMENTS

APPEAL BRIEF UNDER 37 C.F.R. § 41.37

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OCTOBER 18, 2007
Date

Dear Sirs:

Pursuant to 37 C.F.R. § 41.37, Appellants hereby submit this Appeal Brief in furtherance of the Notice of Appeal filed on August 1, 2007 and of the Notice of Panel Decision from Pre-Appeal Review dated September 18, 2007. Appellants authorize the fee prescribed by 37 C.F.R. § 41.20(b)(2) in the amount of \$500.00 to be charged to Deposit Account No. 50-0413. Permission is hereby granted to charge or credit Deposit Account No. 50-0413 for any errors in fee calculation.

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I. REAL PARTY IN INTEREST

The real party in interest is the assignee of record, Endius, Inc., a corporation organized and existing under and by virtue of the laws of Delaware, and having its principal offices at 23 West Bacon Street, Plainville, Massachusetts 02762. An assignment from the inventors, Thomas W. Davison, Timothy E. Taylor, and Adam Sher, conveying all right, title and interest in the invention to Endius, Inc., has been recorded at Reel 011491, Frame 0687.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

III. STATUS OF CLAIMS

Claims 1-43 have been cancelled from the application. Claims 44, 45, and 47-57 stand finally rejected under 35 U.S.C. §102(b) as being unpatentable over Murdock (U.S. Patent No. 3,044,461). Claim 46 has been indicated as being allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. All finally rejected claims, namely claims 44, 45, and 47-57, are being appealed.

IV. STATUS OF AMENDMENTS

The amendment after final filed June 29, 2007 has not been entered.

V. SUMMARY OF CLAIMED SUBJECT MATTER¹

The invention relates to a cannula for receiving surgical instruments for performing a surgical procedure on a body. The cannula comprises a tube structure defining a passage through which the surgical instruments are inserted into the body. The tube structure has a proximal end and a distal end. The tube structure includes an expandable portion for enabling an increase in the cross-sectional area of the passage at least at the distal end.

As shown in Figure 1, a cannula 10 is a tubular structure 12 centered on an axis 14. The tubular structure 12 defines a passage 16 through the cannula 10. Surgical instruments are inserted into the body during surgery through the passage 16. The tubular structure 12 comprises

¹ The references to the specification and drawings provided herein are only illustrative and not limiting in any way.

a first tubular portion 20 and a second tubular portion 40 attached to the first tubular portion. The first tubular portion 20 has a proximal end 22 and a distal end 24. The second tubular portion 40 of the tubular structure 12 is attached to the distal end 24 of the first tubular portion 20. An arcuate guide 80 is formed in the second tubular portion 40 and extends between inner and outer surfaces 70 and 72 of the second tubular portion. The arcuate guide 80 extends along a curvilinear path in the central portion 64 of the second tubular portion 40 toward the second end 60 of the second tubular portion. In the tubular configuration of the second tubular portion 40, a guide pin 90 is located in the arcuate guide 80 and is movable along the curvilinear path of the arcuate guide.

Turning now to the claims, independent claim 44 recites an apparatus for providing access to a spinal location within a patient, comprising an elongate body having a proximal end and a distal end (see, for example, specification at paragraph 16) and defining a length between the proximal and distal ends such that the proximal end can be positioned outside the patient and the distal end can be positioned inside the patient adjacent the spinal location (see, for example Figure 5). The elongate body has an outer surface and an inner surface (see, for example, specification at paragraph 16). The elongate body is expandable from a contracted configuration (see, for example, specification at paragraph 23 and Figure 2) to an expanded configuration (see, for example, specification at paragraphs 23-24 and Figure 1). The cross-sectional area of said body at a first location is greater than the cross-sectional area of said body at a second location in the expanded configuration (see, for example, specification at paragraph 24 and Figure 1). The first location is distal to the second location. The apparatus also comprises an arcuate guide (see, for example, specification at paragraph 21 and Figures 1, 3, 4, reference 80) having an elongate length, a first end (see, for example, specification at paragraph 21 and Figure 1, reference 82) and a second end (see, for example, specification at paragraph 21 and Figure 4, reference 84) along which a portion of the elongate body is moveable from its contracted condition (see, for example, specification at paragraph 23 and Figure 2) to its expanded condition (see, for example, specification at paragraph 24, Figures 1 and 3), the arcuate guide extending generally in the direction of expansion between the contracted and expanded conditions (see, for example, specification at paragraph 29).

Independent claim 50 recites an apparatus for providing access to a spinal location within a patient, comprising an elongate body having a proximal end and a distal end and defining a

length between the proximal and distal ends (see, for example, specification at paragraph 16) such that the proximal end can be positioned outside the patient and the distal end can be positioned inside the patient adjacent the spinal location (see, for example, Figure 5). The elongate body has at least first and second sides and is expandable such that a transverse dimension extending between the first and second sides of the elongate body at a first location is greater than a transverse dimension extending between the first and second sides of the elongate body at a second location, wherein the first location is distal to the second location (see, for example, specification at paragraph 24 and Figure 1) and the elongate body provides an access path to the spinal location between the first and second sides (see, for example, specification at paragraph 30 and Figure 5). The apparatus further includes a guiding mechanism comprising a curved elongate portion (see, for example, specification at paragraph 21 and Figures 1, 3, 4, reference 80) extending in a generally transverse direction along which a portion of the elongate body is moveable from its contracted condition to its expanded condition (see, for example, specification at paragraph 23 and Figures 1, 2).

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

1. Whether claims 44, 45, and 47-57 are patentable under 35 U.S.C. § 102(b) over Murdock (U.S. Patent No. 3,044,461).

VII. ARGUMENT

- A. Claims 44, 45, and 47-57 are patentable over Murdock.

i. The Examiner's interpretation of Murdock is unsupported

The Examiner asserts that Murdock teaches a device for providing access to a surgical location within a patient including an elongate body having an arcuate guide having an elongate length along a portion of the elongated body that is able to move from its contracted condition to its expanded condition. The Examiner asserts the cam ring 40 of Murdock is equivalent to the arcuate guide recited in the claims. Appellants respectfully submit that the cam ring 40 of Murdock does not have the structure or function of an arcuate guide. The cam ring 40 of Murdock appears to be a circular ring that functions by exerting a constant force on rigid clips 41, and by being moved back and forth in a longitudinal direction, the cam ring 40 appears to cause blades 33 to flex outward and inward. See Murdock at column 4, lines 19-23 and 36-44

and FIGS. 4 and 5. Murdock does not appear to teach an arcuate guide or guiding mechanism as is recited in the claims. The Examiner's interpretation of Murdock as teaching the claimed arcuate guide and guiding mechanism is thus unsupported by the actual disclosure and figures of Murdock.

ii. Claim 44

Appellants submit this rejection is in error because the Murdock reference fails to teach each and every element of the claims, as is required for anticipation. MPEP 2131 states:

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)... "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989)."

Emphasis added. Appellants submit that Murdock does not teach the identical invention in as complete detail as is recited in independent claim 44.

Independent claim 44 recites, in part, "an arcuate guide having an elongate length, a first end and a second end along which a portion of the elongate body is moveable from its contracted condition to its expanded condition, the arcuate guide extending generally in the direction of expansion between the contracted and expanded conditions." Emphasis added. Murdock does not appear to teach such a structure. As discussed above, the Examiner asserts the cam ring 40 of Murdock is equivalent to the arcuate guide recited in the claims. The cam ring 40 of Murdock, however, does not appear to have an elongate length, a first end and a second end along which a portion of the elongate body is moveable, and to be extending generally in the direction of expansion between the contracted and expanded conditions. Murdock teaches:

a rigid cam ring 40 that is constantly in camming engagement with the spaced apart cammable surfaces of a circular series of rigid clips 41 which are of recurvate or hairpin shape and fixed respectively on the inside surfaces of the blades 33. The U-shaped portions of all the clips 41 are engaged by the single camming ring 40 at a point in the length of the instrument spaced sufficiently far from the socket member 16 of the pivotal joint to effect simultaneous flexure of each blade in its portion between the camming ring and the socket member.

Emphasis added; see column 4, lines 19-29. Murdock specifically teach element 40 as a cam ring. Appellants submit that the structure of the cam ring 40 appears to be a continuous ring.

structure and thus cannot be considered to have first and second ends as is recited in the claims. FIGS. 4-5 of Murdock show the relationship between the cam ring 40, clips 41, and the blades 33 in the contracted position (FIG. 4) and the expanded position (FIG. 5). The figures and description of Murdock appear to show that, as the cam ring 40 is moved distally, the cam ring 40 presses against the clips 41, causing contraction of the blades 33 (FIG. 4), and that when the cam ring 40 slides back in a proximal direction, it allows expansion of the blades 33 (FIG. 5).

The cam ring 40 of Murdock does not appear to have an elongate length along which a portion of the elongate body is moveable from a contracted condition to an expanded condition, and to be extending generally in the direction of expansion between the contracted and expanded conditions. The Examiner has not indicated which dimension of the cam ring 40 of Murdock is equated with the claimed "elongate length" of the arcuate guide.

Without any explicit explanation by the Examiner of which dimensions of the cam ring and elongate member of Murdock are being equated with the claimed arcuate guide and portion of the elongate body, Appellants submit that there are two possible ways to interpret the relative movement between the cam ring 40 and clips 41 of Murdock, neither of which anticipates the structure recited in independent claim 44.

In the first possible interpretation, the diameter of the cam ring is equated with the claimed "elongate length". Thus, the "elongate length" of the cam ring 40 of Murdock is assumed to be the dimension extending from top to bottom in FIGS. 4 and 5. The first and second ends would thus be the top and bottom of the ring as it is situated in FIGS. 4 and 5. Additionally, while the Examiner has not specifically described the portion of Murdock equated with the claimed "portion of the elongate body" that is moveable along the arcuate guide, it will be assumed for the purposes of this argument to be the clips 41 of Murdock because this is the element against which the cam ring moves to expand or contract the blades 33. With this interpretation, the cam ring 40 in Murdock does extend generally in the direction of expansion between the contracted and expanded conditions. However, the cam ring does not have an elongate length, a first end and a second end along which a portion of the elongate body is moveable from its contracted condition to its expanded condition, as is recited in claim 44. With the above interpretation, the clips 41 of Murdock move along the width of the cam ring 40. As shown in FIGS. 4 and 5, the cam ring 40 moves from a position essentially over the clips 41 (FIG. 4) to a position just overlapping an end of the clips 41 (FIG. 5). This movement is along a

longitudinal axis of the device, while the direction of expansion is transverse, as clearly seen in FIGS. 4 and 5. The above interpretation of Murdock thus fails to teach each and every element of independent claim 44.

In the second possible interpretation, the width of the cam ring 40 is equated with the claimed "elongate length", and is represented in FIGS. 4 and 5 as the left-to-right dimension of cam ring 40. The first and second ends would thus be the left and right edges in the figures. With this interpretation, the cam ring 40 does appear to have a length and first and second ends along which a portion of the elongate body (clips 41) is moveable from its contracted condition to its expanded condition. However, the width of the cam ring 40 extends longitudinally, while the direction of expansion between the contracted and expanded conditions is transverse. This interpretation of Murdock thus also fails to teach each and every element of claim 44.

Thus, no matter how the cam ring 40 of Murdock is interpreted with regard to its movement along a portion of the elongate body (clips 41), the cam ring 40 and clips 41 of Murdock cannot be seen to be equivalent to the structure recited in independent claim 44.

Additionally, Appellants submit that the device of Murdock does not inherently possess the structure recited in independent claim 44. MPEP 2112 IV. states:

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is **necessarily present** in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or circumstances is not sufficient.' " *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999)

(Emphasis added). Appellants submit that the claimed apparatus, in particular the structure of the claimed arcuate guide, is not necessarily present in Murdock. It appears the Examiner is asserting that the structure of Murdock could be modified to achieve the claimed structure of the arcuate guide. This is not a proper basis for an anticipation rejection.

Further, there is no suggestion or motivation for one of ordinary skill in the art to modify the device of Murdock to achieve the device as claimed. Reconsideration and withdrawal of the rejection are respectively requested.

iii. Claim 50

Independent claim 50 recites, in part, "a guiding mechanism comprising a curved elongate portion extending in a generally transverse direction along which a portion of the elongate body is moveable from its contracted condition to its expanded condition". Emphasis added. Murdock does not appear to teach such a structure. The Examiner appears to be equating the clips 41 of Murdock with the guiding mechanism comprising a curved elongate portion recited in the claim. As shown in FIGS. 4 and 5 of Murdock, the clips 41 appear to extend in a longitudinal direction rather than in a transverse direction as asserted by the Examiner. Further, a portion of the elongate body in Murdock does not appear to be moveable in a transverse direction along a curved elongate portion of the clips 41. Rather, Murdock teaches "rigid clips 41 which are of recurvate or hairpin shape and fixed respectively on the inside surfaces of the blades 33." See column 4, lines 21-23. The portion of the elongate body of Murdock that is moveable from a contracted condition to an expanded condition appears to be the blades 33, which are fixed to the clips 41. The clips 41 thus cannot be seen to have a curved elongate portion along which a portion of the elongate body is moveable, as is recited in the claims.

Murdock thus does not appear to teach a guiding mechanism comprising a curved elongate portion extending in a generally transverse direction along which a portion of an elongate body is moveable, as is recited in the claim. Further, there is no suggestion or motivation for one of ordinary skill in the art to modify the device of Murdock to achieve the device as claimed. Reconsideration and withdrawal of the rejection are respectively requested.

iv. Claims 45, 47-49, and 51-57

For at least the reasons set forth above, Murdock fails to teach each and every element of independent claims 44 and 50, from which claims 45, 47-49, and 51-57 depend. Murdock thus cannot be seen to anticipate the elements of the dependent claims. Further, there is no motivation or suggestion for one of ordinary skill in the art to modify the device of Murdock to achieve the device as recited in claims 45, 47-49, and 51-57. Reconsideration and withdrawal of the rejection are respectfully requested.

B. Conclusion.

For the reasons stated above, the rejection of claims 44, 45, and 47-57 under 35 U.S.C. §102(b) should be reversed.

Respectfully submitted,

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By their Attorney,

Date: October 18, 2007



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VIII. CLAIMS APPENDIX

44. An apparatus for providing access to a spinal location within a patient, comprising:

an elongate body having a proximal end and a distal end and defining a length between the proximal and distal ends such that the proximal end can be positioned outside the patient and the distal end can be positioned inside the patient adjacent the spinal location, said elongate body having an outer surface and an inner surface, said elongate body being expandable from a contracted configuration to an expanded configuration, wherein the cross-sectional area of said body at a first location is greater than the cross-sectional area of said body at a second location in the expanded configuration, wherein the first location is distal to the second location; and

an arcuate guide having an elongate length, a first end and a second end along which a portion of the elongate body is moveable from its contracted condition to its expanded condition, the arcuate guide extending generally in the direction of expansion between the contracted and expanded conditions.

45. The apparatus of Claim 44, wherein the elongate body comprises a first member and a second member moveable relative to each other.

46. The apparatus of Claim 45, wherein the arcuate guide comprises a slot and a member moveable within said slot.

47. The apparatus of Claim 44, wherein the elongate body in the contracted configuration is substantially tubular having a substantially circular cross-section.

48. The apparatus of Claim 44, wherein the elongate body comprises sheet metal material.

49. The apparatus of Claim 48, wherein the elongate body is made of stainless steel.

50. An apparatus for providing access to a spinal location within a patient, comprising:

an elongate body having a proximal end and a distal end and defining a length between the proximal and distal ends such that the proximal end can be positioned outside the patient and the distal end can be positioned inside the patient adjacent the spinal location;

the elongate body having at least first and second sides and being expandable such that a transverse dimension extending between the first and second sides of the elongate body at a first location is greater than a transverse dimension extending between the first and second sides of the elongate body at a second location, wherein the first location is distal to the second location and the elongate body provides an access path to the spinal location between the first and second sides; and

a guiding mechanism comprising a curved elongate portion extending in a generally transverse direction along which a portion of the elongate body is moveable from its contracted condition to its expanded condition.

51. The apparatus of Claim 50, wherein at least one of the first and second sides comprises a metal portion.

52. The apparatus of Claim 50, wherein at least one of the first and second sides comprises a substantially smooth metal surface facing said access path.

53. The apparatus of Claim 50, wherein the elongate body comprises a proximal portion and a distal portion coupled with the proximal portion.

54. The apparatus of Claim 50, wherein the elongate body is substantially tubular having a substantially tubular cross-section at least when not expanded.

55. The apparatus of Claim 50, wherein the access path is sized such that more than one surgical instrument can be advanced simultaneously along the access path between the proximal end and the spinal location.

56. The apparatus of Claim 44, wherein the distal end is configured to be inserted through an incision in the back of a patient.

57. The apparatus of Claim 50, wherein the distal end is configured to be inserted through an incision in the back of a patient.

IX. EVIDENCE APPENDIX

No additional evidence has been presented.

X. RELATED PROCEEDINGS APPENDIX

There are no related appeals or interferences.